OPEN AIR CLASSES

and the care of

BELOW PAR CHILDREN

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THE COMMITTEE FOR THE STUDY OF THE CARE AND EDUCATION *of* PHYSICALLY HANDICAPPED CHILDREN *in the* PUBLIC SCHOOLS OF THE CITY OF NEW YORK

REPORT OF THE SUB-COMMITTEE ON OPEN AIR CLASSES AND THE CARE OF BELOW PAR CHILDREN

BOARD OF EDUCATION OF THE CITY OF NEW YORK

1941

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OPEN AIR CLASSES

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* Deceased April 16, 1940.

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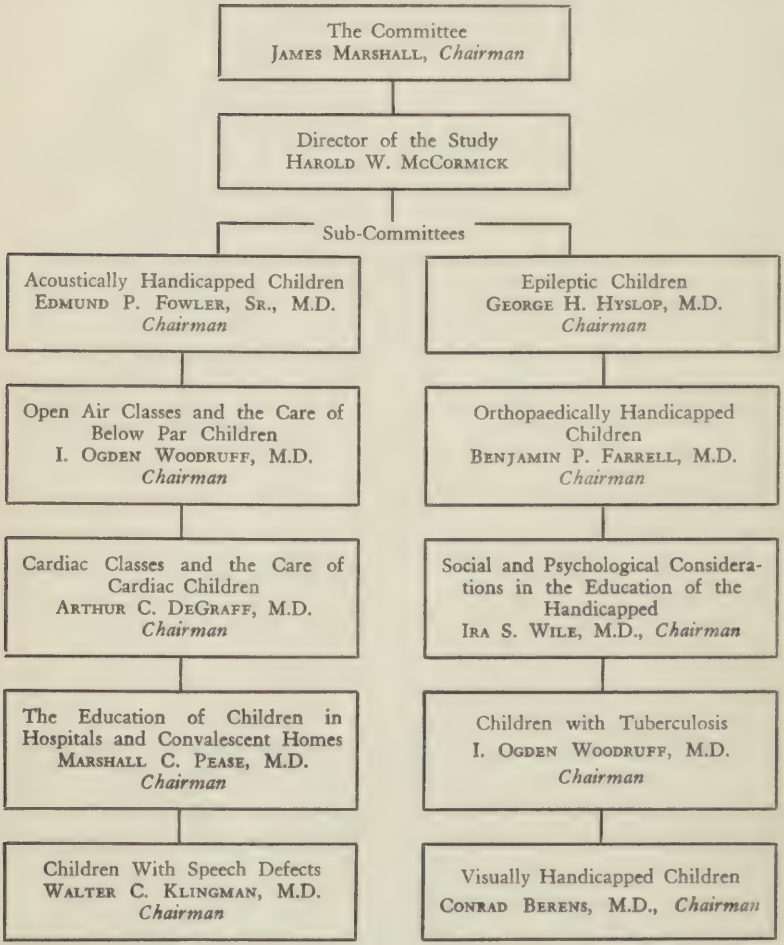

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Preface

In 1936 the Board of Education appointed The Committee for the Study of the Care and Education of Physically Handicapped Children for the purpose of determining the extent to which the public school program for physically handicapped children had kept abreast of advances in medical knowledge and educational practice. No previous attempt had been made to determine the total extent of the need for special educational provisions nor to evaluate the effectiveness of the special program in meeting individual needs, though studies had been made of certain groups of children included in the total program.

There have been few recent critical attempts to evaluate special services provided in public school systems for physically handicapped children. Most studies that have been made deal with either the purely medical aspects of the program or with teaching and administrative procedures. Since there has been much controversy over the desirability of having special classes for below par children the Committee decided that before it could reach any conclusions with respect to them a comprehensive study would be necessary. Though no funds were made available to it, the Committee has not only surveyed the program in the New York City schools but has also familiarized itself with the ways in which similar problems are being met by cities throughout the country.

Among the many persons to whom acknowledgment is due are Dr. Harold G. Campbell, Superintendent of Schools, who facilitated the work of the Committee; Margaret J. McCooey, Associate Superintendent in Charge of the Education of the Handicapped, and to the teachers and school officials who gave such splendid cooperation to the members of the Committee; Dr. John L. Rice, Commissioner of Health of the City of New York; Dr. George T. Palmer, Deputy Commissioner of Health, and the Director of the District Health Administration, Dr. Margaret W. Barnard, who made the facilities of the Department of Health available to the Committee; Dr. Harold H. Abelson for making analyses and summaries of the reports submitted by the educators; Dr. Howard Reid Craig for

analyses and summaries of the reports of the visiting physicians; the Works Projects Administration, which provided statistical and clerical work and its director of Educational Research, Dr. Saul B. Sells, under whose direction the statistical work was done; Dr. Fred Deal Crooker, a teacher in the Robert E. Simon Junior High School, who was assigned by the Superintendent of Schools to assist the Director and who independently organized a committee of open air class teachers to study the present program, and to the teachers of open air classes in the Borough of the Bronx who participated in this study; Mark D. Hirsch, a teacher in the Christopher Columbus High School, who was also assigned to assist the Director; J. H. Berkowitz and Dr. Lyman C. Duryea of the Crippled Children's Division of the Department of Health of the City of New York, for editorial assistance; the many physicians and educators, who, as members of or as assistants to the Committee, gave so generously of their time and learning; the Public Health Relations Committee of the New York Academy of Medicine and the New York Tuberculosis and Health Association, both of which have reviewed and approved this report.

It was particularly fortunate that this study was made under the chairmanship of Dr. I. Ogden Woodruff, who was one of those originally instrumental in establishing open-air classes in the public schools in New York City and who was responsible for the examination of children admitted to these classes during the years from 1910 to 1915. His early association with, and intimate understanding of, these classes and the problems they present have been of great value in this study.

HAROLD W. MCCORMICK, *Director.*

Introduction

In presenting this report the Committee realizes that its conclusions and recommendations are of a nature to provoke considerable discussion, and that within the school system itself they may meet with opposition.

In any branch of government established services tend to perpetuate themselves, particularly if superficially they have an emotional appeal, even though fundamentally they fail to meet the needs of a situation for which better procedures are available or may be developed.

At the outset of its work the Committee had as its objective a survey of the operation and administration of the open air classes with a view to evaluating the efficiency of this operation and administration; and from analysis and study of the data obtained to determine the ways in which these classes might be of greatest service in meeting the needs of the children they serve.

In the course of its study it became evident that one serious defect in administration lay in the fact that the Departments of Health and Education were working largely independently of each other within their own structures despite the related responsibilities for the program.

It also found that in many instances the Department of Health did a poor job in the type of children it selected for recommendation; and that the value of the classes was further diminished by the long delay before final admission caused by passing the names of the children recommended through a central bureau of the Department of Education for approval.

However, to have it clear that neither defects in administrative organization nor deficiencies in administrative procedures were responsible for the conclusions and recommendations of the Committee, it seemed wise to introduce the report by a brief statement which might make more readily understandable the grounds for reaching the final conclusions. These grounds are to be found in the changing ideas concerning both the health problems of children of school age, and the methods most desirable for handling these prob-

lems within the School Health Service of the Department of Health and the educational system.

The conclusions and recommendations at which the Committee finally arrived grew out of the realization:

First, that not only are the physical conditions, which, in 1910, were considered basic predispositions to the development of tuberculosis in children erroneous, but that the techniques, then set up in the schools for tuberculosis prevention, are obsolete at the present time.

Second, that the problem of tuberculosis prevention among children of school age is now relatively unimportant compared with that of establishing a satisfactory organization for caring for the below par child.

Third, that the fundamental medical concepts of the needs of the below par group of children, as well as the procedures considered most desirable for meeting these needs, have undergone material changes during the last quarter of a century, and that the open air class has failed as a mechanism for meeting these needs.

It is worth comment, in view of the conclusions reached, that among the physicians in full agreement on the conclusions and recommendations of this report the Chairman of the Committee on the Open Air Classes was the physician first in charge of the so-called "anemic classes" when they were inaugurated in 1910; and that the Chairman of the Sub-Committee of the Public Health Relations Committee of the New York Academy of Medicine which recommended the approval of this report to the Public Health Relations Committee, was in 1910 none other than the Chairman of the Committee on Prevention of Tuberculosis of the Charity Organization Society, at the request of which at that time the Department of Education inaugurated these classes.

Furthermore, it should be noted that the Committee's medical conclusions and recommendations are in close accord with those recently approved by the National Tuberculosis Association through its Board of Directors. The membership of this board includes many of the outstanding authorities on tuberculosis in the country.

It is not amiss to emphasize the point with which the educational members of the Committee agree that the determination of the

procedures best suited to meeting the needs of blow par children in the schools in New York City is one to be based primarily on specialized and expert medical knowledge and experience. This should be the foundation upon which modified pedagogical procedures are based.

Finally it should be emphasized that nothing in the findings of the report or in the committee's conclusions or recommendations reflects even indirectly on the sincerity of purpose of the open air class teachers. They are in no way responsible for the failure of the program or the poor selection of children. Numerous visitors, both medical and pedagogical in their studies of these classes commented favorably on the sympathetic approach and understanding shown by the open air class teachers.

I. Ogden Woodruff, *Chairman.*

I

Origin and Development of Open Air Classes

Origin and Development in Europe

In 1894 an open-air forest school for debilitated children was founded at Charlottenburg, a suburb of Berlin. This school, however, had been antedated by pioneering efforts in Padua, Vienna and Berlin itself, with outdoor classes for tuberculous children. In England Sir William Mather had organized in 1902, an open-air school at Manchester for debilitated children under school age, while the London School Board had long previously been making provision for physically handicapped children found to have more obvious disabilities. The Board opened its first special schools for the blind and deaf in 1874, for the mentally and physically defective in 1892, and in 1899 took over from private hands control of the first school for crippled children.

Charlottenburg was, nevertheless, the first to include sickly school children in general, rather than merely tuberculous cases. The organization and regime of this school influenced the course of open-air education in other parts of the world. It was distinctly a forest school, located amidst the Gruenwald pines and firs. Originally it was in session from August through October only, the weather during these months permitting complete out-of-doors activity. At first the approach of winter meant the closing of school, but after a few years the term was lengthened from Easter to Christmas. Sessions were held daily, including holidays. The buildings were rough and inexpensive, but were sturdy and well-designed. The two classrooms each had one wall consisting chiefly of large French windows, and transoms in the opposite walls and roof. When the weather permitted, the windows were swung out, but in cold and

inclement weather, they were shut. The classes consisted of 20 to 25 students each. The authorities made the forest school a recuperating place for anemic, nervous, scrofulous children, and children with slight heart or lung troubles, who could not stand the usual five or six hour school period, but were not so debilitated as to be entirely exempt from school attendance. In no case were the seriously ailing permitted to attend. The diet was reputedly excellent and varied, although somewhat forced.

British physicians and public authorities were so impressed by the Charlottenburg project that the London Council established an experimental open-air school near London in 1907. Its purpose was to assist in the recovery of debilitated children. Similar schools, set in woodland surroundings, soon followed in other centers, and by 1938 there were 101 day and 84 residential open-air schools throughout England, accommodating 10,000 children.

These schools were in session from the beginning of June to the end of October, with hours from nine to seven each week day, and until 1 P.M. on Saturday, after which the children could remain for supervised play. Most of these schools were situated upon former estates, and used the residences thereon, but portable buildings, completely open on one side, were added for classroom purposes. The children alternated between these and the woods. Two hours of rest were compulsory after the noonday meal. Steamer chairs, army blankets, and blanket coats were assigned to the children as needed. The diet and the daily routine for the children's activities followed a definite plan.

The English authorities measured results mainly by gains in weight and height, by increase in chest development, and by haemoglobin gains. There was close medical control of the schools, the pupils being examined every two weeks. This care, three meals a day for six days in the week, and a generous amount of rest made the English authorities feel that results were as gratifying as those in Germany.

Other countries developed similar schools during the next decade. Efforts made in Italy, France, Switzerland, the Scandinavian countries, and Australia, sought to approximate the achievements claimed for Germany and England.

The published records leave no doubt that the reason for the establishment of open-air schools abroad was to combat what was considered potential tuberculosis in children who were debilitated, underweight or malnourished, or anemic. The treatment centered around fresh air, rest and nourishment. At no time were cases of tuberculosis recommended for open-air schools anywhere. It did not take long for these widely acclaimed schools to influence American physicians, educators and tuberculosis associations, and within a few years they were organized in this country.

Open-Air Classes in the United States

Interest in tuberculosis was stimulated by the International Tuberculosis Congress held in Washington, D. C., in 1908. In that year, an open-air class was inaugurated in Providence, R. I., following the efforts of the Providence League for the Suppression of Tuberculosis, which had worked with a few "pre-tuberculous" children during the school vacation of 1907, as a volunteer service to the Providence school authorities. An unused schoolhouse was remodeled, and equipped with large windows hinged at the top so they could be swung out to provide an open-window room. In Providence, as elsewhere, stress was laid upon fresh air, nutrition, rest, smaller classes, and personal hygiene.

Similar classes were started in New York City, Chicago, Boston, Cleveland, Pittsburgh, St. Louis, Canton, Mass., Allentown, Pa., Fresno, Calif., Rochester, N. Y., and many other cities. In 1916, there were more than a thousand classes in 168 cities. In this country, as in Europe, the initiative had come from medical sources, but with some modifications. The American tendency was to shift from rustic *schools* to individual open-air *rooms,* and to adopt roofs, porches, classrooms, remodeled buildings, tents and unused schoolhouses, often in congested urban areas, for this purpose.

Open-Air Classes in New York City

"Open-air classes for anemic children" were officially known by that name in New York City from the time of their creation in 1910 until 1917. By the latter year, however, that name was dropped, and "open-air classes" substituted. In some schools at the present time, these open-air classes are called "health classes" and "fresh air classes," but they are the same type of class. In the past two decades,

popular misconception has incorrectly associated the name "open-air classes" exclusively with these classes for anemics, "malnutrites" and tuberculosis contacts. Yet, in reality, the name open-air classes must technically also be extended to include the so-called tuberculous classes. In this report, however, they will be called open-air classes, regardless of the period referred to, as meaning classes for children diagnosed as anemic, malnourished, and debilitated.

In 1909, the Inspector of Ungraded Classes reported to the Superintendent of Schools, in regard to children unable to do regular school work in the normal school environment:

> They are easily fatigued and consequently are often disorderly; they are frequently absent from school; they are weak and sickly; they are sure to catch every disease; they are pale, anemic, badly developed; they give the impression of holding on by the teeth.

This sweeping generalization was followed by the statement that these children were more able than the ungraded, but that a different environment was necessary for them. The report also asserted (erroneously) that the forest schools in Europe were open every day of the year, and that anemia there had been improved or cured in every case. On the strength of this, it called for a similar school in New York.

Dr. John Winters Brannan, president of the Board of Trustees of Bellevue and Allied Hospitals, who was a strong advocate of "open-window ventilation," was also interested in the open-air class idea. Dr. William M. Maxwell, Superintendent of Schools, in his annual report for 1909, announced that the Board of Estimate and Apportionment had made a small appropriation for fitting up "open-air" rooms in regular school buildings for sickly children, but that several questions remained to be determined regarding equipment of the rooms, and the clothing and feeding of the children.

Toward the end of 1909, a committee consisting of a number of physicians noted for their efforts against tuberculosis, members of the Charity Organization Society, members of the Board of Education, the City Superintendent of Schools, and the Superintendent of School Supplies, after some meetings, finally decided to start an experimental open-air class for anemic children in April, 1910. Public School 21, Manhattan, in the heart of an Italian neighbor-

hood, was designated for the class. Children in the 1A to 4B grades, found after a medical examination to have tuberculous tendencies, were to be admitted. The classroom had large windows which swung out horizontally, but it was to be occupied only during inclement weather because an open balcony was available for study and rest. When possible the temperature was to remain at 50° during the winter months. A cup of milk and a biscuit were to be given to each pupil at the beginning of the morning session. At noon they were to have their regular school lunch with some addition, and two hours later milk again. All children were to rest in the open air for an hour, and some were permitted to sleep longer. Ten weeks after the formation of the class, it was reported that the physical improvement of the children was marked, and that they had already gained an average of 3-1/3 pounds each.

With the growth of these classes, children were selected for them on the basis of periodic physical examination, standard age-height-weight tables, and their history of contact with open cases of tuberculosis. Treatment centered around cold, fresh air, rest and nourishment. It must be remembered that both the reasons for the introduction of open-air classes in New York City and the therapy embodied in their organization were in complete accord with prevailing medical opinion of that time.

Thus, in the beginning, fresh air was the vital requirement of the program, and the innovation was carried to extremes. Later, as nutrition gained in importance, the emphasis shifted to food, its planning and preparation, and the serving of mid-morning and mid-afternoon meals in certain schools. Subsequently, rest was to become a more significant feature of open-air classes.

In 1910, knowledge of tuberculosis had advanced considerably but no machinery existed for ascertaining whether children were contact cases. Nevertheless, it was maintained that all that was necessary for "pre-tuberculosis" children was fresh air, extra nourishment and an average of an extra hour of sleep or more per day. Given these benefits, it was *believed* that the children *might remain in homes* which might harbor tuberculous relatives, *provided gross carelessness on the part of the parents did not exist.*

In 1911, a report to the Superintendent of Schools stressed that

the children in "anemic" classes were not tuberculous, but had been chosen on account of malnutrition and anemia, and that preference was given to those found with these conditions: tuberculosis contacts, organic valvular disease of the heart, incipient chorea, or other nervous manifestations, poor chest development, and those who had difficulty applying themselves to study. Three to five haemoglobin determinations were being made of each candidate, and height-weight tables were also used. In the latter, age was deliberately avoided inasmuch as height and weight in relation to age were not considered then to be fully valid in New York City, because foreign-born children and children of foreign parentage normally exhibited deviations from standard tables.

Twenty-five was set as the desirable registration in each class. The daily routine was as follows:

9:00- 9:15	washroom, milk
9:15-10:15	work
10:15-10:30	breathing exercises
10:30-11:45	work
11:45-12:45	washroom, lunch
12:45- 1:45	rest hour (allowed to sleep until they awaken)
1:45- 2:00	breathing exercises
2:00- 2:50	work
2:50- 3:00	milk, dismissal

Extra feeding was introduced in the public schools in 1909 by the newly organized New York School Lunch Committee, which had as one of its purposes "the formation of special classes for mothers for instruction in the proper care of children, especially in cases of poor nourishment."

When the New York City Health Department reported in 1913 that it had found 14,000 cases of malnutrition among the children in the public schools, the New York Association for Improving the Condition of the Poor took over the work of the School Lunch Committee "as an experiment and demonstration," which the committee continued to direct until 1919.

It was then felt that the demonstration of serving lunches at cost, together with the studies of the problem of nutrition which the Committee had conducted, had established "an effective weapon for combating defective nutrition," and "the committee concluded that its mission had been performed, and that the time had come for the

full responsibility and control to be lodged in the Department of Education."

In 1912, Dr. Maxwell proposed an open-air work and play school in the suburbs, possibly on Staten Island, patterned upon the English and German models, but nothing came of the suggestion.

June, 1913, marked the end of the third complete year of New York's anemic classes, of which there were then fourteen in Manhattan and the Bronx. While it was appreciated that among the "pre-tuberculous" children, increased diet and restricted exercise produced marked gains in health, the practice of putting poorly nourished children in cold, fresh air without additional nourishment fell into disfavor.

These classes provided little opportunity for outdoor exercise. It was thought advisable to keep the children within doors because of the New York climate. Roof accommodations had not yet been adapted for open-air classes, and, for various reasons, could not be used as they were. Nevertheless, the benefits of fresh air in moderation had been proved.

In 1914 the Medical Supervisor decided to introduce open-window ventilation in regular classrooms. Ninety test classrooms were cut out of their central school ventilating systems and open windows were used instead. Teachers of these classes reported that there were fewer absences, fewer illnesses, and a brighter and more alert atmosphere throughout the day. These reports indicated benefits to be derived from fresh air, and led to a more general adoption of open window ventilation. Today the majority of schools are using open window ventilation. In the newer schools, mechanical ventilators draw fresh air from the outside into the classrooms and heat it when necessary.

In the year 1914 to 1915, the number of anemic classes increased from 39 to 54. The reason was not surprising, inasmuch as a wider latitude of causes for entry had come to be tolerated. Among the types of children accommodated were those in whose home there had been a recent death from tuberculosis, arrested or cured cases of the disease, and children frequently absent because of colds or bronchitis.

Two suggestions were made by the Medical Supervisor in 1915.

He urged the changing of the name "anemic classes" to "fresh-air classes," to avoid the stigma associated with the former. He also suggested going beyond the scope of classrooms to aid the physically below-par children. Extension of social and medical services was needed for the removal of physical defects, if normality was to be achieved.

By 1916, the general aim was to accomplish:

1. The gradual installation of such classes in each school.
2. Adequate medical supervision.
3. A course of special sociological and pedagogical training for teachers.
4. A system of follow-up to help maintain in the ordinary classroom the benefits derived from a stay in these classes.

A general reorganization of the whole program followed. In November, 1916, the Board of Education adopted a resolution requesting the Department of Health to examine and pass upon all children to be admitted to anemic classes, or to be discharged therefrom. At a subsequent meeting, in March, 1917, between representatives of the Department of Education and of Health, and the Committee on Prevention of Tuberculosis of the Charity Organization Society, further duties were assigned to the Department of Health, to be carried out by its Bureau of Child Hygiene.

This bureau was to determine whether any open-air classes were needed in any particular school, and to recommend their proper locations and equipment. It was to supervise ventilation, heating and temperature; and conduct periodic medical and physical examinations, monthly weighings and measurements, home visits and conferences with parents. It was to prescribe physical training exercises for individual pupils in open-air classes, supply teachers with information, and arrange for cooperation between the teacher, medical inspector and nurse. On the Bureau's recommendation the name "anemic classes" was changed to "open-air classes" in 1917. A new set of records was developed and an extensive organization within the bureau was created to administer an enlarged program.

When the Board of Education took over the control of the lunch services in the public schools in 1919 the extra feeding of children in the open-air classes was curtailed because of lacks of funds. The

Tuberculosis Committee of Brooklyn and Queens met deficits incurred in the school year 1918-19 for extra feeding in these boroughs, while in Manhattan and the Bronx "teachers were urged to have children bring food from home for extra feeding," because funds were not available.

In the school year 1920-21, there were 117 open-air classes with a total register of 3,217 pupils, but the need of extra feeding in the form of a pint of milk for each pupil daily could not be met adequately by the Board of Education. The funds available for this purpose gave out in January and many pupils in the schools of Manhattan and the Bronx were without milk "for a month or more" before private organizations made possible a supply of milk until the end of the year. In Brooklyn and Queens the open-air classes fared better because the Tuberculosis Committee supplied the necessary milk without interruption.

During the years that followed, no startling innovations occurred in the open-air classes. Many new developments came and went as administrative problems arose both in the Department of Health and the Department of Education bureaus in control, but these had generally to do with a multiplicity of details. These classes grew steadily in number as the acceptable causes for admission increased; the wider the range of diagnostic selection, naturally, the greater the number of pupils on the registers of the classes.

In this process the original objective of open-air classes was left behind and they became receptacles for a vast number of children roughly and vaguely classified as "malnourished," as well as a considerable proportion of children found to be normal upon medical examination, except for uncorrected remediable physical defects.

In 1938 a new category of pupils appeared in the open-air classes. These were "administrative cases." The term represented a symbol in a formula devised for the purpose of maintaining the minimum required register of 15 pupils to a class. This was incidental to a program of reorganization for the open-air classes and was worked out during 1938-39 by the health authorities, but not entirely agreed to by the educational authorities.

There were in that year 227 open-air classes, which with a normal average register of 25 pupils per class, made 5,675 opportunities for

placement. However, wide latitude in diagnosis and leniency in selection notwithstanding, only 3,713 admissible cases were found. Thus it came about that, in order to reach the class quota, 813 more children were added classified as "administrative cases." In September 1939 permission for admission by the physicians of "administrative cases" was withdrawn.

In justice to those who were confronted with an admittedly confused situation at that time, it should be added that there were about three times that number of children recommended for admission to these classes on other than "administrative" grounds, who for different reasons did not avail themselves of the recommendation. In most of these cases the obstacle was the parents' refusal to sign consents.

Other significant events which marked the end of the past decade were the several studies which are discussed in other parts of this report and changes in nomenclature. The Department of Health has adopted the name "health classes", while the Department of Education continues to call them "open-air classes." The term "below-par condition" has been substituted for the loosely used one of "malnutrition."

The period culminates with the study undertaken by this committee at a time when it is estimated that there are about 25,000 below-par children in the public schools of New York City.

II

Changing Medical Concepts

In 1910 when the open-air classes, then called anemic classes, were started, the idea prevailed that children who were anemic or malnourished or in contact with patients who had tuberculosis were especially liable to develop this disease. In the medical language of the day they were "pre-tuberculous".

It was thought that children could be selected as anemic on their appearance, and as malnourished by reference to their weight as compared with height as determined by a standard height-weight table.

In the medical opinion of the day this susceptibility to tuberculosis could be overcome primarily by placing these children in classrooms having both natural ventilation and a lowered room temperature. Adjuvants to this were additional rest periods and between meal feeding, though the provision of special rooms with open window ventilation, and the further provision of sleeping bags, sweaters, galoshes and mittens, showed that in the opinion of medical authorities fresh air and cold air were considered by far the more important factors.

Anemia at this time was considered very prevalent among school children. In many schools medical inspectors pronounced a large percentage of the school population affected with this condition.

Early in the course of the development of the open-air classes it was found by actual tests that anemia, far from being a seriously prevalent defect among school children, actually had a relatively low prevalence. This was indeed found to be so low that in order to maintain a satisfactory class census a large percentage of the children selected for those classes had to be drawn from the group of the poorly nourished, a weight deficiency of 10 per cent from the

normally accepted standard being considered as an indication of the need for special care.

How completely the concept of anemia as an important physical defect among school children has been abandoned can be seen by reference to the report of the New York City Superintendent of Schools for the year 1938, in which, of the 4,448 children registered in the open-air classes for that year, for whom diagnoses were available, anemia did not appear in a single instance as the reason for placement therein.

Consequently, one of the chief premises which led to the inauguration of these classes as a preventive measure against the development of tuberculosis in children was abandoned. Furthermore, not only was it found that there was a negligible amount of serious anemia among the school children, but also it was gradually realized that its existence, even when present, was not a predisposing cause to tuberculosis and that its cure could not be accomplished by exposure of the child in school to open window ventilation either at moderate or low temperature.

Although the original premise on which the open-air classes were based was incorrect, namely, the prevention of tuberculosis through cold fresh air in a group of children erroneously presumed to be susceptible to the disease, the open-air classes served a useful purpose in focusing anew medical attention on ventilating problems in schools.

As a result of numerous studies it is now generally agreed that the lower temperatures formerly advocated for the winter months in the class rooms have been determined to be non-therapeutic and in general actually harmful to many children suffering from nutritional deficiency, and that classroom temperatures of between 65° and 70°F. are optimum. In New York City, during the last two years, most open-air classrooms in public schools have been operated at that temperature.

In addition to these conclusions as to optimum temperature which were drawn by the New York State Ventilating Commission in 1923, this same body gave as its opinion that direct ventilation by outside air was most satisfactory. As a result, many of the regular classrooms in the New York City schools are at present so venti-

lated; many new buildings are being equipped with mechanical ventilating units which draw outside air directly into classrooms, providing in effect open-window ventilation.

Regarding malnutrition, which in the early days was synonymous with underweight, many careful studies have been carried out to ascertain if there were any correlation between the presence of malnutrition and tuberculous infection in children. In 1924, The Massachusetts State Department of Health launched a ten-year program for the survey of tuberculosis in children. It was originally intended that all tuberculosis contact cases and all children 10 per cent or more underweight, and children who appeared to be sick, were to be examined.

At the end of three years, after approximately 50,000 children had been examined, the significant fact was revealed that one-third of the tuberculosis cases found were among children who were not underweight and that one-fifth of the "latent tuberculosis" cases discovered in the contact group were among normal or overweight children. This caused an abandonment of the term "pre-tuberculous" which had been based upon apparent anemia and underweight, and in the scrapping of height-weight tables in the preliminary screening of children for further investigation.

As a result of these changing concepts the reason for open-air classes as a protective measure against the development of tuberculosis in children no longer exists. Realizing this, school medical authorities have gradually utilized these classes instead to care for children who appear in need of special medical care, the group which is now generally included in the category of the below-par child. A study of the diagnoses given as the basis of admission of children to open-air classes in the school year 1937-1938, furnished by the Division of Physically Handicapped Children of the Board of Education, shows that, in the minds of those responsible for their selection, "malnutrition" and "below-par" were largely synonymous, as 3,241 of the 4,448 children admitted in this school year were included in this category. It is interesting to note, however, the influence of the older concepts in determining selection as indicated by the classification of 115 of those selected under the heading of pre-tuberculous.

Probably in no field has there been a greater change in medical concept than in that of malnutrition. Yet today, in general, below-par children are selected as malnourished for segregated care in special classes largely on visual examination or by reference to height-weight tables. Malnutrition, or more correctly, nutritional deficiency, is not the simple state it was once considered. Not only are there important nutritional deficiencies apart from a below-weight state but even a below-weight state may have a varied and complex etiological background. Furthermore, a minus deviation from an average standard normal as determined by height-weight tables does not always indicate malnutrition.

The National Tuberculosis Association has stated emphatically that "underweight is not necessarily a symptom of malnutrition nor are all malnourished children underweight." It cites the research of the American Child Health Association as proof that it is unscientific and unfair to set average weight as a goal for all children. Furthermore, one routine physical examination is not a sufficient criterion for judging malnutrition. Dr. M. Derryberry is quoted by the National Tuberculosis Association in this regard.*

> In the best private practice, physicians do not often make such judgments of a child's condition on a single examination. They either know the clinical history of the child and his hereditary background, or they take time to obtain it. They are either acquainted with the child and his peculiarities of structure and function or they observe him over a sufficiently long period to learn the significance of his variations from the normal. But when a physician must estimate a child's nutritional status after a single brief examination, without a medical history such as is ordinarily given in schools or on surveys, his judgments are robbed of their value and wide disagreements . . . arise.

PRESENT CONCEPT OF MALNUTRITION IN CHILDREN

Knowledge about nutrition increases every year. Improvement in tests for specific nutritional deficiencies has changed much of our previous knowledge about nutrition. Lydia Roberts summarized the advances made in the field of nutrition in the foreword to the second edition of her "Nutrition Work with Children." She re-

* *The Physically Below Par Child,* Report of the Committee on the Care and Education of Below Par Children, National Tuberculosis Association, Jan., 1940, p. 8.

marks on the advances made between the publication of the first edition in 1926 and the present edition, revised in 1935.

> A remarkable output of basic research from nutrition laboratories over the country has given new light on many of our fundamental nutrition problems. Studies in growth and development of children have increased in number and have been extended to other aspects of growth and to various nationality socio-economic groups. Methods of assessing nutrition have been given critical examination, and the height-weight method, once so widely accepted, has been severely challenged and, to a considerable extent, abandoned. Health work in the schools which was then largely in the propaganda stage, has advanced to the place where serious attempts are being made to incorporate it into the curriculum on a sound education basis.[1]

This review of present concepts will cover: definitions of malnutrition and of the below-par state, as understood by authorities in the field of child health; description of the below-par child; description of the factors which may produce the below-par state.

Definition

First of all, what is malnutrition? Is it a disease? Ira Wile says:

> Malnutrition itself is not a disease condition. It is merely a symptom of many diseases, of poor hygiene, of bad social conditions, of food inadequacies, or of a combination of any or all of them.[2]

Malnutrition is obviously a symptom or rather a combination of physical signs, not a disease, according to Charles Hendee Smith.[3]

As early as 1915, Sir George Newman, Chief Medical Officer of the Board of Education of England and Wales, said in regard to malnutrition, that it is "a low condition of health and body substance."[4]

These definitions suggest that malnutrition is a complex medical and social problem. This will be apparent when methods of diagnosis and of underlying factors are discussed. With this understanding of the problem, the school Health Service of the New York City Department of Health has included in the group termed "below-par" children those designated as "malnourished." In spite of Wile's suggestion that "we no longer employ the term in its purely dietetic connotation,"[5] the association with insufficient food remains in the minds of the educator and the layman. The term below-par directs attention to the whole child and to the complexity of treatment of the condition.

Dublin and Gebhart's study of Italian children in New York City showed that 75 per cent of the children judged malnourished by the physicians would have been classed as well nourished by the weight standard alone.[6] Clark, about the same time, reported that 50 per cent of the native white children in the study, who were poorly nourished, would not have been discovered had weight been the sole criterion used.[7] The report of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, in discussing open-air classrooms, sums up present knowledge about height-weight tables by saying:

> We now know that weight in relation to height and age is not a valid method of judging nutrition, and that the average weight as shown by height-weight-age tables cannot be considered as a normal or optimum weight.[8]

Medical opinions in this country and abroad agree that the clinical method is the way to diagnose the below-par child. The group of experts appointed by the Health Organization of the League of Nations in 1937, to study methods of assessing the state of nutrition, reported that the clinical method, in conjunction with weighing and measuring children at six-month intervals, was the most practical method for discovering malnutrition among large masses of children.[9]

Lydia J. Roberts gives the following description of the below-par child:

> He usually is thin, but he may be fat and flabby. His skin may have a pale, delicate, wan-like look, or it may be sallow, muddy or even pasty or earthy. Usually blue circles or dark hollows are under his eyes, and the mucous membrane inside his eyelids is pale and colorless. His hair may be rough, like that of a poorly cared-for farm animal, his tongue coated, and his bowels constipated. His skin seems loose, his flesh flabby and his muscles are underdeveloped. Because of lack of muscular tone his shoulders are usually rounded, the shoulder blades sometimes standing out to such an extent as to produce deformity known as "wings," his chest is flat and narrow, his abdomen protrudes, he may be listless at play and work; he is likely to tire easily; and he may be regarded as lazy. He is frequently nervous, restless and fidgety, and he will probably sleep lightly and be finicky about his food.[10]

This below-par state exists in all degrees—from severe cases which

have practically every sign and symptom indicated above, to cases which, without clear symptoms, still give the clinical impression that the child is not functioning at his physical optimum.

Charles Hendee Smith points out how necessary it is to make a thorough analysis of this below-par state in order to arrive at an adequate diagnosis:

> It is only by a careful history, a complete examination and painstaking analysis of his diet and daily hygiene, as well as a study of the family and the home, that we can be in a position to help the child.[11]

The school must at least provide for a careful history, physical examination and an interview with the parent in order to appreciate the significance of the problem, which in many cases is due to ignorance of diet and child management, or to socio-economic factors. There are many influences that operate to produce the appearance of a below-par child. By remembering that there may be and there usually is, a combination of these factors in the individual case, it will be understood that there is no universal remedy for the condition.

The Below-Par Child

In the light of the foregoing discussion it becomes necessary to set down the accepted definition of the term below-par child, as it is employed in this report. "Below-par child" denotes a classification, and not a diagnosis, it indicates a child whose condition is due to definitely diagnosed malnutrition or anemia; to fatigue caused by low vitality potential; or to diminished physical capacities coincidental with chronic defects or convalescence from serious illness.

Heredity and Body Build

All authorities are agreed that heredity does play a part in determining the body build. The question is, how important a factor is it? Recent knowledge shows that stature of children has increased with each generation. There are other influences than body build which run in a family. Good cooking, hearty appetites and good digestion may account for family similarity in appearance. The build, health and attitudes of the family must be considered in evaluating the appearance and needs of the below-par child.

Faulty Diet

The diet may be insufficient in amount, inadequate in kind, or faulty because of poor dietary habits.

Insufficient in Amount. (a) Inadequate breakfast due to poverty, lack of appetite caused by foci of infection in naso-pharynx, constipation, late or indigestible evening meal, or listlessness due to poorly ventilated room and late rising. These are some of the reasons why children eat little or no breakfast. They have been common findings among all economic groups for many years.

(b) Poverty is a factor in inadequate lunches, but hurry likewise is one of the chief causes. Short lunch periods also play a part. Moreover, in spite of school lunchrooms, many children eat their lunches at "hot dog" carts, or candy-and-soda stores.

(c) Too low intake of food, which may be due not so much to poverty as to the ignorance of parents of caloric values. Parents may not realize that active growing children need tremendous amounts of food. In many cases their requirements actually exceed those of the more sedentary adults in the family.

Inadequate in Kind

Children need not only calories to supply fuel, but they equally need proteins, mineral salts and vitamins for normal growth and development. One of the most serious failings in children's diets is the insufficient use of milk. A pint and a half of milk daily is considered necessary in order to supply the calcium and phosphorous needed for bone growth. Too little of the mineral-containing vegetables and too much candy and other sweets are common faults in children's diets. Coffee and tea take the place of milk in the diet in many instances. They may do more harm to a child's nutrition in this way than because of their overstimulating property.

Poor Dietary Habits

Between-meal eating is a serious one of these habits. When children keep their stomach filled through continual nibbling they decrease the appetite. Sweets are usually the between-meal food which dulls the appetite for the regular meal. Hurried and irregular meals may not only affect the amount of food eaten but also must have some influence on digestion and assimilation.

Inadequate Rest

Insufficient or inadequate rest is foremost among the causes of the below-par state. Physiologists have shown that the demand for sleep is even more insistent that that for food, since loss of sleep will produce death even more quickly than starvation. Children need more rest than adults. Yet studies in this country and abroad indicate that many children are getting less rest than the require. It is impossible to state the exact amount required—there appears to be an individual variation. However, a good rule is that a child should have a sufficiently early bedtime, so that he may sleep until he naturally awakens in the morning, and yet be up in ample time to eat a leisurely breakfast and attend to toilet habits before going to school.

The movie habit, home lessons, reading in bed, selling newspapers, the lights and distractions of crowded apartments, all contribute to a late bedtime.

Inadequate rest causes fatigue which may be characterized in children by loss of appetite, inability to sleep and hyper-irritability of the nervous system. This leads to a below-par state. Seham, of the University of Minnesota, has studied the problem of fatigue in school children, and believes that "the child of school age can rest twice a day." He advises 15 minutes before the evening meal as also desirable. He points out that the early sign of fatigue which all children may exhibit from time to time are "inattention, dislike for work in hand, and the desire to rest, sleep or play."[12]

In the survey of 1938 by the School Health Study of 5,600 below-par children in the New York City public schools, 90 per cent of the children whose temperament was mentioned were described as either "high-strung", "cranky", "nervous", "on-the-go", "fidgety", or "restless". Those descriptions readily fit the chronically fatigued child. Bad sleeping conditions making for inadequate rest also contribute to the below-par state. Of the group included in the 1938 survey, two-thirds of the children were found to be sleeping with one or more others in the family.

Infections and Disease

Chronic disease processes can influence nutrition by direct effect

on appetite and digestion through absorption of toxic products. Improvement in vigor, appetite and growth which may follow treatment of diseased tonsils and adenoids, chronic mastoiditis, urinary infections and infected teeth are evidence of the relationship between systemic disease and the below-par state. Gibson believes that the clinical conditions which malnutrition accompanies as a symptom involve almost the entire range of pediatrics.[13] For example, mild rheumatic fever may present a clinical picture of the below-par state. In fact, emphasis upon the discovery of below-par children may serve to uncover more cases of this important disease among the school age group. Hitherto effort has been usually directed to increasing the diet of a child because he looked pale, tired, drawn, had a poor appetite and failed to gain in weight. There is need to study the below-par state of each child in order to treat the condition intelligently with reference to the etiological basis.

Dental caries may be a factor in the condition of the below-par child. Seepage of the products of infection into the systemic circulation may occur with effects which often are not obvious at the time, but which become negatively apparent when the infection is cleared up.

Other Underlying Causes

Important basic causes which influence the growth and development of children are poverty, ignorance and lack of home control.

The English believe that poverty is the common denominator. One writer says that

> the most important cause of malnutrition is the economic status of the family. When the income is low it is difficult to provide satisfactory houses and to obtain sufficient food. The mother is engaged in an unequal struggle, and her health often fails under the strain, or she ceases to care.[14]

In this country attention is also directed to the intelligence factor, parental attitude and home control. Lack of parental intelligence is not confined to the poor. In fact, among the well-to-do there are greater opportunities for indulgence in sweets, movies, dancing and music lessons, and less leisure. Many well-educated parents are ignorant of the fundamentals of child feeding, care and training.

Lydia Roberts sums up the question of providing an adequate diet thus:

> An intelligent and well-trained housewife can come much nearer to providing an adequate diet for her family on a small income than an ignorant housewife with the same amount of money. Poverty is sometimes the explanation of ignorance. On the other hand, poverty is an important factor. Better location, better houses, better and more varied foods, and opportunities for educational contacts require not only an intelligent appreciation of their value but an income adequate to obtain them.[15]

No successful approach can be made to the problem of the below-par state without including a plan for parent education. If a child needs a proper diet he needs it three times a day, not simply a well-balanced luncheon in school. If a child needs rest, he needs it for ten to twelve hours at night and not only the hour in school. If a child needs exercise, sunlight and fresh air, he needs it 365 days a year. If the child needs medical attention the parent must understand the importance of it, and assume the responsibility for care. Parent education, therefore, must be included in any program for care of the below-par child.

From the presentation of the meaning of the below-par state or "malnutrition", it should be clear that the first step in a plan for their care requires search for the underlying cause. When the cause or causes are understood, it should be apparent also that some of them may lie beyond any assistance that the school can give. It should be evident, however, that the school must be prepared to cooperate with the family and the community medical and social welfare agencies to meet the needs of the below-par child.

The modern educational system, to keep pace with present concepts of this problem, must provide a healthful school program. Below-par children need a carefully regulated program of activity, carefully planned attention to food and food habits, adequate sleep and rest, an opportunity for play and social contacts on a 24-hour basis. Each school has some of these children.

In the past forty years many devices have been employed by the educator to cope with this problem. From recent review of this whole question certain facts have become clear in the light of our newer knowledge about the problem of the below-par child.

The Joint Committee on Health Problems in Education of the National Educational Association and the American Medical Association states that the special class is not a panacea for every case of undernutrition.[16] The report of the Committee for the Care and Education of the Below-Par Children, of the National Tuberculosis Association, states that "segregation of below-par children in special classes is not necessary, and is detrimental to their educational and social development." It states further that

> school procedures adapted for individual children should provide rest periods, a lightened school program with avoidance of competitive activities which cause undue stress and strain, and attendance at regular classes for as much of the academic program as the child is able to carry.[17]

This report also emphasizes responsibility of the home in the care of the below-par child.

Since below-par children are not handicapped to the extent of physical incapacity, there does not seem to be any good medical reason for an artificial separation of these children from their fellows of like age and mental development by their segregation in special classes.

Only through the recognition by the health and educational authorities of the complexity of the below-par state in children, both in cause and treatment, can progress be made. This problem challenges the best in pediatric and educational practice.

III

Summary of Procedures and Studies

The Extent and Procedures of the Study

The Committee has endeavored to make its study of open-air classes and of the more general problem of caring for below-par children as comprehensive as its facilities have permitted. It has studied not only the educational program provided by the Board of Education but also the procedures followed by the Department of Health in selecting children for open-air classes and the system of referral for treatment and follow-up.

Before the study was begun the Division of Physically Handicapped Children was requested to compile data about the open-air class program on the basis of a comprehensive outline submitted to it. Some sixty pages of information were thus made available to the committee to orient it to the problem and to assist it in planning its study. Spot maps were also prepared showing the locations of the open-air classes and the residences of the pupils attending them.

The study has included the following:

1. Statistical analyses of the composition of open-air classes.
2. Intelligence and achievement testing of pupils in a limited number of open-air classes.
3. A review of Department of Health medical diagnoses of 2,000 children in open-air classes.
4. A review of 300 Department of Education medical histories of children in open-air classes.
5. A study of licensing requirements for teachers of open-air classes.
6. A study of the qualifications of open-air class teachers.
7. Analyses of questionnaires returned by principals and assistant superintendents.

8. A study of the records and administrative procedures of the Division of Physically Handicapped Children of the Board of Education.
9. A review of an independent study of open-air classes made by open-air class teachers.
10. A review of recent studies of open-air classes and below par children made by the Department of Health.
11. Analyses of selected case histories of 340 children in open-air classes.
12. Visitation of open-air classes in the New York City Public Schools by physicians and educators.
13. Consultations with medical and educational authorities in other parts of the country.
14. A review of the educational and medical literature and of recent studies of open-air classes and below par children that have been made in both the United States and England.

FINDINGS

Number of Open-Air Classes and Enrollments, 1912-1939

According to the annual reports of the Superintendent of Schools for the years indicated below the increase in the number of open-air classes and the number of children registered in them were as follows:

TABLE I
NUMBER OF OPEN-AIR CLASSES AND REGISTER
NEW YORK CITY, 1912-1939

Year	*No. of Classes*	*Register*
1912	16	294
1915	63	1,506
1916	82	1,932
1920	110	2,705
1921	117	3,223
1927	157	3,753
1928	161	*
1931	171	3,787
1932	178	3,878
1934	192	4,659
1935	197	4,637
1936	212	4,797
1937	221	4,959
1938	222	4,986
1939	232	4,760

* No figures available.

Owing to changing methods in reporting, it was not possible to compile from available records the data for the years omitted from the above table. It was noted that corresponding statistics of the Department of Health frequently differ from those of the Department of Education.

Diagnoses of Children Assigned to Open-Air Classes

The data furnished to the committee by the Division of Physically Handicapped Children showed, among other things, as of June, 1938, there were 222 open-air classes distributed throughout the five boroughs, with 4,448 children enrolled in them.* The diagnoses given as the basis for admission to these classes, and the number of children registered under each were as follows:

TABLE II

DIAGNOSES OF CHILDREN ASSIGNED TO OPEN-AIR CLASSES
FOR THE YEAR ENDING JUNE 30, 1938*

Diagnosis	*No. of Children*
Malnutrition	3,241
Tuberculosis Contact	402
Asthma	275
Pre-Tuberculous	115
Arrested Tuberculosis	98
Tuberculosis History	73
Jaundice	27
Chorea	26
Recovered from Grippe	26
Post Pneumonia	25
Appendicitis	21
Tuberculous Glands	19
Misc. (13), 2-12 cases each	68
Misc., one case each	32
TOTAL	4,448

If these figures are analyzed in connection with changing medical concepts regarding some of the causes for entry into open-air classes, a surprising picture results. If the malnutrition cases and those related to tuberculosis in this diagnostic break-down are deleted in deference to present medical opinion, 3,948 children, or 88.7 per cent, are withdrawn, 500 children, or 11.3 per cent, will

* The data for this table were furnished by the Division of Physically Handicapped Children. It will be noted that the total is not in agreement with that previously given for the year 1938. The diagnoses of 538 children were not reported.

remain in these classes, scattered in a heterogeneous diagnostic classification.

Analysis of Medical Record Cards

The Division of Physically Handicapped Children furnished to the Committee such of the medical record cards as were available for approximately 300 selected open-air class children. The dates when some of these children were first admitted to the classes could not be determined because the original medical records were not available for those children who had been in open-air classes for five and more years. Furthermore, for many children, the series of cards for the years spent in open-air classes was incomplete, one or more being missing. Therefore, it was impossible to make a complete study of the situation from the available cards.

However, what analysis could be made showed that the diagnoses on the "green card" often did not correspond to that on the medical record and were, in general, meaningless with reference to open-air class admission.

The Method of Selecting Children for Open-Air Classes

During 1938, the Department of Health sought to work out a more effective and detailed procedure, based upon observation and experience, with the Division of Physically Handicapped Children of the Department of Education, which administers the open-air classes. The customary procedure was for the school physicians to review the health status of children in the open-air classes in May or early June of each year. They would then recommend termination for some children and on the basis of further examinations make selections of others for entrance in the September term.

In the spring of that year, the School Health Service of the Department of Health expressed the opinion that, from the health aspect, the open-air classes were not fulfilling their purpose. It had reached this conclusion not so much because the Division of Physically Handicapped Children was under no constraint to accept its recommendations, and frequently did not, but because the school physicians believed it to be impractical to select a child in May or June for a special class registration in September. This procedure

was necessary, however, because the Department of Education required that the open-air classes be filled as of the opening of the school year. As a result many children entered open-air classes each year on the basis of recommendations made three or four months before entry.

Accordingly, a study was made by the Department of Health of the problem of open-air classes, and in June 1938 a report with recommendations for revision of the class procedures was submitted to the Advisory Committee on School Health Affairs.* Since a special Committee for the Study of the Care and Education of the Physically Handicapped Children had been appointed by the Board of Education, the Department of Health abstained from any final recommendation concerning open-air classes pending the report of this Committee. With this in view, the staff of the School Health Service summed up the situation as follows:

In recent years the tuberculosis problem has changed in New York City, and there are new attitudes and opinions regarding the care of tuberculous and tuberculosis contact children. It seems probable that the original objectives of the open-air classes have been outmoded and that during the transition period confusion has crept in, which needs administrative clarification. Before the school physicians could be of any real value in the open-air class situation, certain changes appeared necessary.

The criteria for admission were to be clearly defined;

the procedure and conduct of these classes were to be changed, if necessary, to care for the new type of child selected, and

the administrative responsibilities and procedures were to be clarified and agreed upon. The staff felt that the existing situation was confused, unsatisfactory and futile, because the time expended seemed wasted in terms of any positive results for the children.

In May, 1938, the School Health Service of the Department of Health made several studies related to the problem, including an analysis of the diagnoses of 5,050 children assigned to open-air classes

* The Advisory Committee on School Health Affairs was organized in 1938. The membership consists of official representatives of the Department of Health, The Department of Education, the Parochial Schools and such interested organizations as the United Parents Association, the Progressive Education Association, the Committee on Neighborhood Health Development and a consultant pediatrician.

throughout the city. This was followed, during the summer of the same year, by a city-wide survey in the course of which the Department of Health physicians visited the homes of approximately 5,600 school children who had been diagnosed as malnourished. Summaries of the results of these studies follow.

Study of Open-Air Classes in the Lower East Side Health District

In one study made by the Department of Health, in the Lower East Side Health District,* an analysis was made of the medical records of 130 pupils in six open-air classes, and of 705 pupils in regular classes. The conclusions of this study were:

1. That the method of admittance to these classes are not based on sound scientific principles.
2. Improvement, if any, occurs during the child's first year of residence in the open-air class.
3. Other more productive and effective methods of caring for malnourished children are available in the community.

City-wide Study of 5,050 Open-Air Class Pupils

The survey made by the School Health Service of the Department of Health in May, 1938, included 5,050 children, almost the total registration in all the open-air classes in the city.** This resulted in the following principal findings and conclusions:

1. About 28 per cent of these children showed a problem referable in some way to tuberculosis.
2. The majority of the children in open-air classes who do not have a tuberculosis problem are classified as "malnutrites."
3. Fifty per cent of the total number of these children had been in open-air classes for two years or longer.
4. More than half of the total number of children should be returned to regular classes.
5. There was marked inequality in the geographical distribution of the open-air classes throughout the city, in reference to the needs of local areas.

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* A study of Health Classes—1938, Frank A. Calderone, M. D., Medical Officer in Charge, Lower East Side Health Centre, Department of Health, City of New York.

** Enrollment figures furnished to the Committee by the Director of the Division of Physically Handicapped Children as of June 10, 1938, were 5,278.

Inadequacy of Diagnostic Criteria for Malnutrition

In addition to these studies, the Astoria School Health Study, which had been in progress for the past four years, under the auspices of the Committee on Neighborhood Health Development, made a thorough study of 50 children who had been diagnosed as malnourished by different school physicians. They found that:

1. The diagnosis of malnutrition obscured exceedingly complicated conditions, medical, social and economic.
2. That the variability of standards of diagnosis of malnutrition, led to confusion in the placing of children in open-air classes as well as in their removal from the classes.

The study further substantiated the opinion, based on the more general studies, that the situation called for the consideration of means other than the open-air class to meet the problem of the below-par child, as well as the development of criteria for determining individual health needs.

Recommendations Made by the Department of Health Based Upon Its Studies

On the basis of these investigations, the following recommendations were formulated:

1. That the recommendations of the school physicians resulting from the May 1938 survey be accepted, and that 2,653 children be returned to regular classes the following school term.
2. That the objective of the open-air classes be to give special intensive health care to a selected group of children for one academic year.
3. That the children selected for these classes be those who have a health problem and who could reasonably be expected to be greatly benefited in one year, preference for the present to be given to malnutrition cases.
4. That the responsibility for selection of cases be placed upon the Department of Health staff.
5. That the regime for the conduct of the class as a whole be reviewed in the light of this new emphasis.

6. That consideration be given to a designation other than "open-air" for those classes. "Health Class" was suggested.

These recommendations were accepted on June 7, 1938, by the School Health Affairs Committee, and subsequently approved by the Commissioner of Health. The Department of Education accepted the recommendation for terminating the assignment of the 2,653 children to open-air class. Representatives of the Departments of Health and Education then formulated an outline of the procedures recommended for selection and admission to, and conduct of such classes, and for health supervision by District Health Officers.

The recommendations of the Department of Health were submitted to the Board of Superintendents in 1938, but were not approved. The educational staff continued to conduct the classes according to their former instructions, while the Health Department staff had received instructions relating to the new procedures. Consequently there was confusion during the school year 1938-1939.

Meanwhile the Department of Health proceeded with its program for the selection of the below-par children. It was recognized that the school physician is not able to make an accurate diagnosis of true "malnutrition"; the word had been loosely used. The term "below-par condition" was substituted. This terminology, based by the physician on physical examination and history, carries a connotation of a condition which may depend on many factors—medical, social and economic.

The program, including the detailed recommendations for the care of the below-par child during school hours, provides a comprehensive health service in the school for the physically below-par child, as follows:

a. Procedures for the discovery of physically below-par children in school.

b. A type of history and physical examination designed to discover the basic health needs of the individual child.

c. Procedures for securing parental understanding of the child's problem and acceptance of responsibility in solving it.

d. Procedures for informing the school of the child's health

needs which must be considered in planning his school program.

e. Procedures for proper referral for treatment when necessary and coordination of care given by an outside agency with the school program for the child.

f. Opportunity for periodic health supervision of the below-par child by the nurse and school physician.

Studies of Administrative Procedures

The committee undertook a study of the administrative procedures of the Division for Physically Handicapped Children. This study was conducted in two parts. One part of it had to do with

a. The number of record forms used and the purpose they serve.
b. The information on these forms, its adequacy and its susceptibility to analysis.
c. The physical make-up of the forms.
d. The continuity of the records.
e. The reliability of the information contained on them.
f. The utilization of the information on the pupil records by
   1. The administrative staff.
   2. The teachers.
   3. The school medical officers.
g. The efficiency with which the program is controlled through records and reports.
h. The degree to which records and reports reflect the program and the conditions in the schools.
i. The present administrative personnel and its adequacy.

Following are the main facts which resulted from this study:

The record forms used in the open-air classes are not uniform. The old Department of Education record form, the so-called "green card," formerly used for recording the medical examination data on children was discontinued some years ago. Physicians of the Department of Health have since been entering those records on various forms or cards, which are not uniform, pending the issuing of a new card by the Department of Education.

Both old and recent records were found to be filled in carelessly,

and to contain little information of any value. Among the deficiencies discovered, the following call for serious consideration:

1. Not all cards indicated whether the medical examinations were for admission, transfer or removal.
2. Medical data were very meager.
3. Recommendations for physical training were seldom indicated, although, particularly on the old forms, prominent space was provided for them on the face of the card.
4. The record of physical defects was often incomplete.
5. The files for these classes, particularly for recent years, were in poor condition.

From the basic records in the Division of Physically Handicapped Children of the Department of Education, it is not possible to know the identity of the pupils in the classes at any time; nor is there a collective basic record of all children in each class at the beginning of a term.

Since the records show a high ratio of malnutrition cases year after year, these figures have been used as reason for the large-scale extension of open-air classes. This is unjustified on the grounds that first, no satisfactory criterion has been adopted for determining this condition in children; and, second, the individual records of the physical condition of the children examined are not generally sufficient to establish a below-par or other condition which makes their segregation in these special classes desirable.

Analysis of Selected Case Histories

The second part of this study consisted of an analysis of the case histories of 340 children in open-air classes in 52 public schools, distributed throughout New York City, which resulted in the following findings:

1. Numerous irregularities were disclosed by the class records of these children, bearing upon practically every detail in the administration of the open-air classes, e.g., admission, retention, transfer, discharge, medical examination and diagnosis, recording, supervision, and inter-departmental relations.
2. More than two-thirds of this total number of children should not have remained in these classes as long as they did.

3. In the majority of these cases, children were found to be "normal," many were even reported as being "perfectly normal" (chiefly with regard to nutrition) in medical examinations at different periods, ranging from a few months to over six years after the date of admission.
4. Of the total number of these children, 36 per cent should have been discharged from the open-air classes, in the course of routine procedure.
5. Fifty-one children, representing 15 per cent of the total number, were admitted to the open-air classes without regard for the established interdepartmental (Department of Health-Department of Education) regulations, namely, placed in open-air classes though not recommended, admitted without health officer's knowledge, placed before examination or recommendation.
6. Still another 15 per cent of the cases represent irregularities due to friction and lack of cooperation between the education and health staffs. For example, failure to admit children to the classes although recommended; disputed records of parents' consents, transferrals without health officers' knowledge, and a few scattered instances of non-conformity under different headings.
7. As in the other studies made in this field, these records showed a high percentage of remediable physical defects which called for the attention of pediatricians, oculists, and dentists, rather than for such ministrations as are conferred upon the below-par children in the open-air class.

Age-Grade Progress of Children in Open-Air Classes

A study was made of the age-grade progress of pupils in open-air classes and a comparison was made with similar data compiled by the Bureau of Reference, Research and Statistics for the city at large. This showed that children in open-air classes compared unfavorably with those in regular classes. The percentages of children underage, normal age, and overage for their grades is shown in Table III.

TABLE III

PERCENTAGE OF CHILDREN IN OPEN-AIR CLASSES WHO ARE UNDERAGE, NORMAL AGE, AND OVERAGE FOR THEIR GRADES, COMPARED WITH REGULAR CLASS PUPILS.

	Per Cent of Children		
	Underage	*Normal Age*	*Overage*
Regular Classes	42%	44%	14%
Open-air Classes	9%	53%	38%

These figures are based on cumulative percentages for all grades, from the first through the eighth. The trends observed at all levels show pronounced retardation, as well as overageness.

The percentages of the total number of pupils in the school progress analysis of the two groups are shown in Table IV.

TABLE IV

PERCENTAGE OF CHILDREN IN OPEN-AIR CLASSES WHO ARE ACCELERATED, NORMAL, AND RETARDED FOR THEIR GRADES, COMPARED WITH REGULAR CLASS PUPILS.

	Per Cent of Children		
	Accelerated	*Normal Progress*	*Retarded*
Regular Classes	11%	63%	26%
Open-air Classes	12%	43%	45%

These age-grade progress findings must be interpreted with caution. The comparisons made with city-wide figures may not be wholly justifiable. A fairer comparison could have been made if children in open-air classes were compared with the children in the regular classes in the same schools. The percentage of retardation is significant; but since data were not available for comparing the age-grade progress of the children in the open-air classes with their progress previous to their admission to these classes and with the progress of other children in the regular classes in the same schools, the conclusions which may be drawn from these data are limited.

Age Span and Grade Span of Pupils in Open-Air Classes

A wide age span and grade span was noted and generally commented upon by the members of the committee and those assisting it. Data were therefore gathered from all open-air classes in the city on age ranges and grade ranges, by means of questionnaires sent to the teachers of these classes. The distribution of these classes by number of half grades taught in them is shown in Table V.

TABLE V

DISTRIBUTION OF OPEN-AIR CLASSES BY RANGE OF HALF YEAR GRADES IN EACH

Grade Range Within Class	*Half Year Grades*													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Number of Classes	2	5	13	23	24	22	21	34	32	27	19	6	2	2

Total Number of Classes—232.

Median number of half grades taught in Open-Air Classes—8.

The range of half grades was found to be from 1 to 14, the median number was 8.

The difference in the ages of children in the same classes ranged from 1 year and 10 months to 9 years and 9 months; median 5 years and 5 months. These extremes and the median age are based on the differences in years and months from the youngest to the oldest child in each class. The segregation of below-par pupils in open-air classes has created classes similar to those of the traditional one room country school. The distribution of these classes according to the ranges in ages of pupils enrolled in them is shown in Table VI.

TABLE VI

DISTRIBUTION OF OPEN-AIR CLASSES BY MAXIMUM AGE DIFFERENCES OF PUPILS ENROLLED IN EACH CLASS

	Maximum Difference in Ages of Pupils								
Number of Years	9	8	7	6	5	4	3	2	1
Number of Classes	4	1	24	48	50	45	36	20	4

Total number of Classes: 232.

Median Age Range Within Class: 5 years and 5 months.

Intelligence and Reading Ability of Fifth and Seventh Grade Pupils in Open-Air Classes

Through the cooperation of the WPA Comprehensive Testing Program, children in the fifth and seventh grades were given group intelligence and reading tests in May 1939 by the administration of the New Stanford Reading Test, Form V, and the Pintner Test of Mental Ability, Form A. They included 257 children in open-air classes—137 in grade 5B and 120 in 7A. The results obtained were compared with those for pupils in regular classes throughout the city. A summary of the findings follows.

In the fifth grade:

1. The grade norm is 5.8. The medians attained in this open-air group were:

Paragraph Meaning	5.6
Word Meaning	5.6
Reading Average	5.6

Open-air class children were only two months below the grade norm.

2. The children in open-air classes are 4 months below average in relation to the normal progress age for this grade level.
3. In the intelligence test the weighted median I. Q. was 93.97 for the children in the open-air classes.

In the seventh grade:

1. The grade norm is 7.4. The median attained in the open-air classes were:

Paragraph meaning	6.3
Word meaning	6.9
Reading average	6.7

In this test the open-air class pupils showed deviations from the grade norms ranging from five months in word meaning to thirteen months in paragraph meaning below the norms. The use of the city wide norms as a basis for comparison may not be wholly justified but it was considered the most suitable basis for comparing ability and school progress that was available to the Committee.

2. The median chronological ages for both boys and girls in the open-air classes is five months above the norm of 12.
3. In the intelligence test, the weighted median I. Q. in the open-air classes was 91.13.
4. On the basis of the limited testing that was done, the intelligence and achievement scores of those pupils in open-air classes were found to vary considerably from those of children in regular classes. Their school attendance compares favorably with the attendance in regular classes, i.e., open-air classes 93.2 per cent, regular classes 93.7 per cent.

5. The children in open-air classes at the fifth and seventh grade levels had average I. Q.'s of approximately six and nine points lower respectively than the I. Q.'s for those grades for the city as a whole. This should be considered in relation to the above noted differences in achievement.

Teacher Qualifications and Licensing Requirements

An analysis of the questionnaires returned by the teachers indicated that with the exception of special courses required for the open-air class license their academic qualifications differed little from those of regular grade teachers.

The committee made a study of the present licensing requirements for teachers of open-air classes and the initial preparation and subsequent courses taken by these teachers. From this it concluded:

1. That any licensed teacher should be competent, under medical direction, to care for below-par children under her jurisdiction.
2. That the vital importance of medical advice in the care of below-par children cannot be replaced by an open-air class teacher with 15 credits in special courses.
3. That if special training is indicated for these teachers it should consist of special methods for the education of children in multi-grade classes.

Questionnaires to Principals, Assistant Superintendents and the Director of the Division of Physically Handicapped Children

A questionnaire was sent to assistant superintendents and to principals of all schools in which there were open-air classes. Most of the replies bear out the findings of members of the Committee who visited classes and interviewed teachers and principals. The predominant comments were made, of course, with a view to continuing the open-air classes under improved conditions. The replies did not lend themselves to statistical analysis but they indicate that, despite the many attempts at reorganization and coordination of the health and educational administrative units which share in the responsibilities for these classes, their respective functions remain ill defined. The

procedures at present in force are not conducive to smooth cooperation among principals, teachers, health officers and the central bureau. Suggestions as to equipment, sanitary facilities and educational materials indicate that these requirements are not being met adequately. The frequently mentioned suggestion that free milk and sandwiches be provided points to a deficiency in the conduct of the open-air classes, considering that the majority of the children attending them have been registered as "malnutrites".

The reply from the questionnaire sent to the Director of the Division of Physically Handicapped Children indicated a need for more clerical and supervisory services and referred the Committee to the annual reports of the Division for further information concerning its needs.

Open-Air Class Teachers' Report

It was the desire of the committee to see the open-air class problem or the problem of the below-par child from as many angles as possible. A committee of open-air class teachers in the schools of the Bronx was organized for this purpose. This study was carried on independently of the official Board of Education committee.

It should be borne in mind that the committee of open-air class teachers was concerned with the improvement of services in the existing pattern and no consideration was given to the care of the below-par child in ways other than by assignment to open-air classes.

In its final report,* the teachers committee presented the following findings and recommendations with respect to open-air classes:

1. The borough of the Bronx has 38 open-air classes located in 31 public schools with an average daily register of 796 pupils.
2. The open-air classes are centralized even less than other physically handicapped classes which result in an extremely large and unwieldy age and grade span with almost every teacher having first as well as eighth year children in her class.
3. The educational supervision of these classes is not uniform or coordinated to the needs of the below-par child.

* Final reports of Teacher Committees Studying Physically Handicapped Classes, January 30, 1940.

4. The medical supervision is badly organized. Medical diagnoses are not adequate to provide the teacher with the specific information necessary to coordinate the services at her disposal towards the improvement of the child's physical condition.
5. The present program of inservice training is failing to keep the teachers alive to the rapidly accelerating changes in the educational care of below-par children.
6. There is no lunch or extra food program.
7. A study of the administrative and supervisory procedures of the Division of Physically Handicapped Children showed a need for a reorganization to eliminate present inefficiency and to coordinate present services to the needs of the below-par child.

In view of these findings the committee of teachers made the following proposals for the improvement of the Open-air program:

1. The centralization of open-air class children throughout the city into school units so that there would be:
   a. Unified education supervision.
   b. Unified medical and psychological service geared to the needs of the below-par child.
   c. An adequate program providing school lunches at cost for those able to pay, and free lunches for those unable to do so.
   d. Complete elimination of any grade span, making possible at least two classes to a grade so as to permit homogeneous grouping.
2. A complete change in the present inservice program so as to make possible a dynamic program of teacher education developed by the teaching staff and geared to the problems the teachers are facing in the classroom.

SUMMARY OF OBSERVATIONS BY PEDIATRICIANS AND EDUCATORS

The membership of the Committee was not large enough to enable it to visit a large, widely distributed sample of classes, so it asked the assistance of a number of pediatricians and educators.

At the time the study was started there were 232 open-air classes in the public schools. It was neither necessary to the study nor possible for the Committee to visit all of them. A representative sample of classes was therefore selected for study based upon educational, economic, sociological and demographic reference statistics which were compiled for the Committee. The size and distribution of the sample of classes selected for study, however, was itself sufficient to insure its being representative of the program as a whole.

In April 1939, the Director addressed letters to a selected list of 42 pediatricians requesting them to visit specified open-air classes and send a report on them to the Committee. A standard form prepared by the Committee was sent to them so that the reports would be uniform. The diagnoses upon which the children were admitted to open-air classes were furnished by the Department of Health, and these were sent to the physicians for the classes they were asked to visit and report upon. A letter introducing the physician to the principals of the schools was furnished by the Superintendent of Schools.

Twenty-eight of the pediatricians responded to the request. Including visits made by members of the Committee, more than 60, or roughly 25 per cent, of the 232 open-air classes then in operation were visited and reports upon them were received by the Committee.

Sixteen members of the educational faculties of the colleges and universities within the city assisted the educational members of the committee and more than 100 classes were visited by this group.

These specialists made their observations independently of each other, and submitted individual reports. Many of the reports were supplemented by letters in which the findings and opinions of the observers were stated at greater length than in the report forms.

Summary of Reports of Physicians

It is obvious that these reports, emanating from so many sources, must exhibit a wide variety of opinions based on many variable factors. These variables include locations of schools, types of popu-

lation contributing to the school enrollment, school buildings offering varying physical facilities, weather conditions at the time of visit, the fact that the visits were made in the month of May, the individual teachers and school officials interviewed and many other factors, including the attitude, opinions and background of the visiting physicians themselves. The following is a summary of the consensus of these reports.

Size of classes

These classes are limited to not more than 25 pupils, in contrast to the regular classes which average more than 30. This smaller number of pupils permits much more individual attention to the physical needs and responses of each individual child. It allows greater freedom of movement in the class and it tends to reduce, if not do away with, the tension of mass discipline necessary in larger classes which may work a hardship on the physically sub-par child.

Ages and grades of pupils

The grades of the children in these classes ranged from 1B to 8A, and the children's ages were from 7 to 15 years. The median number of half grades taught in a single class was eight. From a pedagogical viewpoint this is not the most satisfactory arrangement.

Management of Classes

The physical facilities offered in these classes depend largely on the actual school structure. Most of the rooms have southern or southeastern exposure. In some cases the classes occupy one room; in others there are two rooms, one for work and one for rest. Available outdoor play space varies from school to school. Ventilation and room temperatures go hand in hand inasmuch as ventilation is obtained by means of open windows. Thus the room temperatures and the amount of fresh air ventilation are partially dependent on prevailing outdoor temperatures. It has been shown that low temperatures in classrooms where children remain in a state of physical inactivity are undesirable. In general, the teachers try to keep the temperatures between 65 and 70°F., and this should be adequate if provision is made for the removal of used air and for gentle air

movement without drafts. There is no particular value attached to maintaining low temperatures for these children.

Stated Rest Periods

Rest periods totaling from 45 to 90 minutes daily are given to children in these classes and are of decided value and constitute one of the phases of this type of class, which, in general, is most worthwhile. Their effectiveness depends largely on the attitude of the teacher, but the principle is a commendable one. Closely associated is the idea of supervised play periods utilizing only limited physical activities. Cots are provided for rest periods, and in many cases, when necessary, also extra clothing or blankets.

Extra Food

In common with children in the regular classes, children in these classes whose families are on relief are given free lunches at noontime. No data were obtained on the number of children in these classes receiving a noon meal. Extra feeding during the morning varies in different schools. In some, the pupils are given free milk and other food; in others they are encouraged to bring it from home; in still others, no provisions are made. Although pediatricians are not in general agreement on inter-meal feeding, the majority are decidedly opposed to it, provided the child can have three adequate meals four or more hours apart.

Relationship of Teacher to Home and Medical Agencies

It should be possible under the present system for the teacher to establish close contact with the school nurse and physician and to acquaint herself with the home conditions of the children under her care. How effectively this is done seems to depend largely on the interest, enthusiasm and acuity of the teacher. In some instances this is admirably exemplified but in others one cannot but question how well the teacher comprehends the problems before her or the remedial facilities, both medical and social, that are within her reach if she wants to employ them.

Admission

It is evident that a careful study of the child is needed if we

are to discover what should be done for him. Present criteria for admission to these classes do not conform to this need, and in the majority of cases the admissions are based on inadequate diagnosis and uncertain recommendations.

An attempt to improve the conditions of the below-par child presents many difficult problems. No two cases are alike in the grouping or in the occurrence of etiological factors, yet the routine plan for follow-up consisted of advice on diet and rest for all cases. An inherited type of body build might be the reason for the appearance of one child; dire poverty with insufficient food might be the reason in another case; bad eating habits the basis in a third, a fourth case might reveal a combination of several factors; in other cases the causative factor may be a temporary illness with resultant loss of weight; still other children may have serious medical problems such as chronic infection of tonsils, middle ears or sinuses, a rheumatic cardiac condition, or severe asthma. The label of malnutrition masks the true condition of many below-par children.

Medical Supervision

It is quite generally felt by the visiting physicians that the medical supervision is inadequate. The medical examiners are rarely pediatricians, nor are consultant services of pediatricians utilized, and the examinations are too infrequent and incomplete. A great many cases were found in which obviously necessary remedial procedures had not been instituted. This may be due to lack of medical supervision, failure of cooperation on the part of the families or failure on the part of the teacher or nurse to urge therapeutic measures. In other cases treatment for physical defects has been accomplished, but the children linger on in these classes, apparently due to administrative inertia. There is definite lack of liaison between these classes and the various agencies giving medical care to these children. In many instances, the teacher, though much interested, is unable to ascertain, at first hand, medical opinions concerning her pupils as to diagnosis, progress and prognosis. This is apparently due to the unwillingness of the various clinics to impart information to outsiders without written

consent of the parents. Although this attitude is understandable, better direct cooperation between clinics and schools should be arranged.

In justice to the Department of Health it must be stated that during the past year changes have been instituted to improve the medical administration and to integrate the medical services rendered to the children throughout the public schools. Most of the record forms examined by the visiting physicians had been filled out in previous years. New forms have since been introduced.

Since the functions of the Bureau of School Hygiene were placed under the Bureau of District Health Administration of the Department of Health in February, 1938, staff training of school physicians has been instituted and standards forms of school procedures in written form have been issued. In line with these efforts there is every reason to expect that there will be improvement in the character of the medical supervision rendered to the school children.

Psychological Factors

General psychological considerations revolve more about the nature and effects of the open-air classes rather than upon the psychology incidental in any particular handicap. It is doubtful whether open-air classes can be justified as psychologically necessary.

There is no evidence that segregation serves to improve nutrition, decrease anemia or improve vitality. If vitality is lowered, forced application to keep up the grade level is illogical and disadvantageous psychologically. There is a slight but indefinite psychological advantage due to the utilization of rest, smaller classes and reduced strain upon the children. Such psychological benefits, however, would accrue from the education of any children and are not peculiar to open-air classes. While segregation *may not always implant the idea* of *inferiority in the minds of children, they should not unless absolutely necessary,* be denied the sociological influence of mingling with and working in groups of children of their own ages.

Discharge from Classes

Standards for discharge from open-air classes are so vague that

as to suggest that there are few, if any, such standards. Some children have remained in them for five or more years. Recommendation for discharges seems to depend as much, if not more, upon the judgment of the teacher as upon that of the school physician. Even among the physicians there seems to be a good deal of variability in criteria for discharge.

Pupil Health Records

A review of some of the old and more recent records to gauge the adequacy of the information contained on them revealed that they were filled in quite indifferently. Often cards did not indicate whether the examination was for admission, transfer or renewal. The files for these classes, particularly for recent years, were in poor condition. The medical data were meager, and gave little really valuable information.

Summary of Reports of Educators

Curriculum

Teachers of the special classes attempt to hold the curriculum in line as far as possible with that of the regular classes. The necessity for enabling the child to tranfer to regular classes is given as the principal reason for maintaining curricular similarity.

Increased emphasis on health consciousness, knowledge, and routines was found to be almost universally present. It is not implied that health education is minimized in the regular classes, but the special class teachers were noted to utilize every opportunity to stress health. The adequacy of the procedure employed may be questioned on the following grounds:

a. The pupils were being made too much aware of their health status.
b. The condition of the room and equipment and the inadequate facilities for handling food brought from home set none too good an example.
c. More direct and vital measures than the stereotyped use of

health posters and scrap books seemed necessary to counteract or improve untoward health factors in the home.

In some schools an indefinite type of pre-vocational industrial arts program necessitated attendance of teachers at frequent conferences with the Inspector of Industrial and Placement Work. It appears that the implementation of what seemed to be a serious and well designed attempt was a function of the individual teacher and varied with the emphasis placed on manual activities in the particular school in which the class was located.

As far as one can judge, the rooms do not generally evidence richly developed activity programs. Such special subjects as music, drawing, nature study, shopwork and cooking are reported as eliminated or reduced in emphasis. In some cases material from these subjects was brought in incidentally in conjunction with the industrial arts program or the health projects. The probability seems to be that, while touched upon, they do not receive the same emphasis as in the regular classes, for these subjects had to make way for the great emphasis placed on the fundamental subjects required for grade promotion.

Increased emphasis is applied to minimum essentials in the tool and content subjects with consequent reduction in the interpretive, appreciative and integrative phases of school studies. The probable explanation of the emphasis may be found in the combined operation of these factors: (a) the attempt to assist the children in meeting grade promotion standards; (b) the emphasis on the "tangibles" in such standards; (c) the necessity for individual rather than class instruction; and (d) the reduced time available for instruction. It was maintained by many of the teachers that the individualized instruction is a significant factor in eliminating special pedagogical weaknesses.

Daily Program

To comprehend the basis for the organization of instruction in the special classes it is necessary to note the facts with regard to the grade distribution of the pupils in these classes. The distribution of the ranges in grade of the open-air classes has been previously analyzed in this study.

In two classes the grades ranged from 1A through 8B, yielding a grade span of 16 half-year grades. This, of course, does not mean that each grade was represented in this class; in fact, in several classes with wide range there were gaps of one or two full years within the distribution of grades. As was to be expected, the classes with the smaller grade ranges were found where there were several classes of the same type in a single school, although in one school the boys and girls were separated. The boys were placed in one class with a grade range from 2A through 6B while the girls were assigned to a second class with a grade range from 3B through 8A. The midscore of the grade range distribution is eight half grades or four full school years. Assuming an even spread within a class, this would mean that there were on the average three pupils for each grade within the median type of class. Thus, from the point of view of grade distribution, the rural one-room school is duplicated.

In line with the necessity produced by the wide distribution of grades within a class the predominant type of learning activity is individual seat work. Each student is given study assignments, usually in traditional textbooks and somewhat stereotyped exercise books, and is required to recite or submit written papers on his work.

In some classes older children correct the work of the younger ones. The assignments or individual "contracts" varied from tasks selected mechanically from a textbook to carefully prepared mimeographed "contracts", designed for use by all the children in a given grade. As noted in connection with the discussion of curricular modification, the circumstance of predominantly individual work seems to have caused emphasis on the memorization of such items of fact or skill as could readily be included in self-study exercise books.

The pupil's reaction to the individual assignments varied, but were on the whole favorable. The pupils, as a rule, worked assiduously and with self-reliance. A cooperative atmosphere generally prevailed. Some of the very young children seemed somewhat lost, and some of the older ones seemed bored. In this regard the hand of the particular teacher was apparent. Some of the teachers

showed remarkable organizing ability; most of them seemed highly efficient, a few showed poor management.

Because of the largely individual nature of the work, all sorts of variation in the length of lesson, in the distribution of time and in the material stressed were reported. It was commonly asserted by the teachers that the individual setup resulted in an adaptation to the physical and educational status of the pupil. Such adjustments, however, seemed to be made within the framework of a traditional subject-matter approach. Several observers commented on an apparent lack of functional adaptation to the special needs of the children in these classes.

Teachers seemed to have a very busy time of it, keeping the children profitably occupied. What seemed to make it possible for them to cope with this difficult task was the breathing spell while the children were occupied with their studies. Where the instructional program was ineffective in terms of present-day educational thought, the explanation seemed to lie in the misdirection of effort rather than a lack of it.

Utilization of Materials and Devices

Instead of receiving textbooks through the usual channels, the special classes are allowed a small fund from which the teachers may purchase text materials. This does not always meet the needs, and has to be supplemented with "loans" from the regular school supply and the use of sample texts supplied by publishers. With the exception of a widely used series of graded exercise books, a considerable diversity of materials appears to be employed, including a number of up-to-date instructional books and a larger number of the old type of textbook.

A great diversity of teacher-constructed material is used. Drill assignments of the busy-work type seems to predominate. Some little use of meager reference material is sometimes called for in the assignments. There seems to be no organized provision for the interchange of materials among the teachers in these classes.

As regards maps, charts and other visual aids, the special classes seem no better supplied than, if as well as, the regular classes. Opportunity to attend school movies, to make museum visits,

to attend assemblies, etc., varied with the school; there was less participation in such activities than in regular classes in most of the schools visited.

Individual-Child Requirements

The teachers in these classes have a fuller knowledge of the individual child, as is to be expected from the smaller size class, the longer residence with the same teacher, and the necessity for keeping physical records.

Because of the common interest of the teacher and parent in the health of the child there is greater parent-teacher contact than in the regular classes.

The teachers are required to maintain a case record of each child. This record includes information concerning the physical condition, social background and school achievement of the child. In a few instances the case histories were thorough. In the majority of cases they contain only readily available data. Some of the teachers report that they have visited the homes of the children, but more often knowledge of the home is obtained from the child or through the parents who visited the school.

Children in the special classes were reported to be receiving no more complete psychological test service than children in regular classes. The "standardized" diagnostic tests and the more recently developed diagnostic procedures in school subjects seem seldom to be used. It was indicated by some of the teachers that they were able to ascertain the child's weakness informally and incidently to the conduct of individual instruction. With respect to disciplinary and emotional problems the teachers seemed to have grasped something of the objective mental hygiene point of view.

Supervisory Services

In general it may be said that the teachers in open-air classes receive about the same degree of supervision as those in regular classes. To some extent, however, these special teachers enjoy somewhat greater freedom of action.

Briefly, the supervisory services include:

a. Medical advice with regard to individual children as reported from the physician assigned by the Department of Health.

b. General supervision by the principal, assistant principal, or both. The teachers of special classes are expected to follow the usual regulations and attend faculty conferences. There is no general rule as to the extent to which the special class teacher is permitted to work out individual problems.

c. Special educational supervision by the Inspector of Industrial and Placement Work. This supervision takes the form of attendance at semi-monthly or monthly group conferences. The effect of this supervision is limited by the fact that only one hour a week is devoted to handwork.

d. Supervisory service, emanating from the office of the Assistant Director in Charge of the Division of Physically Handicapped Children, appears to be sporadic and concerned chiefly with administrative details.

IV

Conclusions

The committee wishes to stress that its study has been confined to the open-air classes maintained in the regular schools within the City of New York. Its conclusions and recommendations concerning such classes are, therefore, not applicable to the open-air classes maintained for New York City pupils in private institutions situated in rural surroundings outside New York City. These classes, which are similar to the early German and English open-air schools, are under a more rigid medical supervision and are in no way comparable to the open-air classes in regular school buildings within the city.

On the basis of its studies the Committee has reached the following conclusions:

1. That the premise on which the open-air classes were originally established, namely, to prevent the development of tuberculosis in certain types of children, is no longer tenable.
2. That the authorities in charge of the classes have frankly abandoned the original aim and are now utilizing the classes as a means of caring for children whom they consider in need of special medical care, i.e., the below-par group.
3. That the classes, even if operated to obtain optimum results, would signally fail to meet the problems of the care of the below-par child for the following reasons:
   a. Many children require modified school programs because of their health needs for periods sometimes of only a few days and sometimes longer. Obviously, the beginning and termination of the condition which necessitates this supervision and care does not always correspond with beginning and end of the school semester.

b. These classes can not serve the best interest of the greatest number of children because, due to educational administrative necessity, there is a rigidity of admission and discharge, which makes it impossible for the classes to aid children who need temporary adjustment of their school curriculum. It is highly problematical also, whether the children selected for open-air classes in May of each year are going to be those who need special adjustment of the school program in September.

c. In many instances the nutritional deficiency these children present has its roots not in disease but in the economic and sociological home background.

4. That the classes have been administered for many years inefficiently and incompetently. This has been due chiefly to lack of cooperation with the Department of Health on the part of the Division of Physically Handicapped Children of the Department of Education. The Committee was impressed with the sincerity and personal interest in the welfare of the children exhibited by most of the teachers in the classes visited. They were doing good work under difficult educational conditions.

5. That centralized control over discharge from these classes by the Division of Physically Handicapped Children, which reviews the recommendations of school physicians and makes the administrative decisions, causes admission and discharge to be slow and unwieldy. The present procedure which requires approval by a central Bureau of the Department of Education before children can be placed for special care, involves endless red tape and delays, resulting in inefficiency and non-cooperation between the central bureau and the local school principals. The physicians may advise the return of a child to the regular classes but this recommendation has to pass from the school to the central administrative bureau for approval, and back again to the school, to consummate the discharge. This mechanism often takes several months and is open to justifiable criticism.

6. That open-air classes present three chief advantages over the regular classes, namely, small class registers, lessened tension and supervised rest periods. The most important of these is rest, which can be obtained for children without segregating them in special classes.
7. That it is highly undesirable to segregate the below-par children in special classes. There is grave doubt as to the wisdom of implanting in the mind of these children the idea that they are different from other children, that they are physically unfit. As a matter of fact, they do not differ materially from many children in the regular classes. Furthermore, this segregation results in the wide age and grade spans which are general throughout these classes, both of which are considered educationally and psychologically undesirable.
8. That the needs of the below-par child can be better met by other procedures, described in the recommendations, which can be made available to children in this group throughout the school system, instead of in the limited number of schools in which open-air classes now exist. Therefore, this committee can see no good reason or justification for the continuation of these classes.
9. That such other medical and administrative procedures should be developed, which will offer to the below-par child without segregation the chief advantages of the open-air classes, namely, a lightened school program, extra periods of rest and lessened tension, in a manner which makes them available both to the children with temporary disabilities and to those whose subnormal physical state is more protracted.
10. That the Department of Health is now much more cognizant than previously of the complexity of the problem of the medical needs of the below-par child and has developed procedures for handling them. That if new procedures for the handling of these children are to be successful, so far as regards rest periods and lightened school programs, their administration should be completely decentralized, authority being vested in the school principal.
11. That if the recommended program is to be successfully car-

ried out there must be a liaison perfected between the representatives of the Department of Health and the local school authorities to the end that the latter shall be given a much more intelligent understanding of the needs of individual children requiring school adjustments than they have at the present time.

12. That definite instructions should be given to the teaching staff by the school physicians as to the individual health needs of these children, based on which a carefully worked out adjustment of the school program can be made for each individual pupil.

V

Recommendations

The committee has found that the open-air classes do not effectively meet the health needs of the physically below-par children, including those temporarily below-par after illness. The most general need is for a lightened school program, for additional physical relaxation and rest, with consideration of the medical, economic and social background of such children, and appropriate individualized follow-up work to remedy the causes of the below-par state.

Recommendation 1. That the open-air type of class be discontinued. That children in open-air classes be returned to regular classes.

The number of children in any given class, whose physical conditions require that they be given a modified or lightened school program is relatively so small that their retention in regular classes with such a program should not impose a hardship on the teachers.

Recommendation 2. That a lightened school program be provided for physically below-par children whose condition places them in any of the following categories:

a. Those children convalescent from long or serious illness whose physical capacities have been diminished as a result.
b. Children who have really serious nutritional disturbances.
c. The so-called tired or easily fatigued children with low vitality potential who cannot keep pace with normal school and play activities.
d. Children with clinically significant anemia.
e. Children suffering from chronic disabilities and physical defects, for whom added rest is both part of treatment and a

necessity in order for them to keep up with normal school progress.

Recommendation 3. That there be provided in all schools where the building facilities permit, a room for rest purposes to which children in need of rest during school hours may be sent.

a. That rest facilities be provided for children while basic conditions are being corrected.
b. That rest facilities be available for one or more periods of 40 minutes each, daily, for children who in the opinion of the school physician require rest.
c. That these rest periods be arranged so as to work the least hardship to the child's educational progress.
d. That the remainder of the day be spent with the regular classes.
e. That these rest facilities be made available in elementary schools, junior high schools, high schools and vocational schools.
f. That these rest facilities be made available to children after acute illness, as well as to those children whose below-par state will be of longer duration.
g. That no children who appear acutely ill be placed in rest rooms.

Recommendation 4. That these rest rooms afford the children quiet, pleasant, sanitary surroundings, conducive to relaxation.

a. That the rest rooms be under the supervision of regular teachers. These teachers can be freed from their classes during periods of group activities. Teachers with special training are not required.
b. That the rest room not be conducted along arbitrary lines to enforce sleep or complete idleness.
c. That a room temperature of approximately 65 to 70 degrees be maintained, with open window ventilation, without drafts, when artificial heat is in use, and that advantage be taken of this type of ventilation to produce variations in temperature for brief intervals by periodic flushing with fresh air.

d. The equipment may include cots, reclining chairs and reading and other materials, the use of which will not cause disturbance to other children.

Recommendation 5. That where the need is indicated, a child be permitted to come to school late in the morning, be given a longer lunch period, or be permitted to leave early in the afternoon.

Recommendation 6. That mechanical ventilating units drawing outside air directly into classrooms, which provide in effect open window ventilation, be installed as far as possible in all classrooms for all children.

Recommendation 7. That selection of below-par children and responsibility for recommendation for special school adjustment for health reasons rest with the School Health Service.

a. That while the need for adjustment should be based on the specific recommendations of the school physician, yet in the absence of the physician it seems wise that the initiative for making temporary emergency adjustments should, pending the school physician's visit, rest with the school principal.
b. That children be selected for lightened school programs on the basis of the following procedure:
   1. *Routine and referred examination.* Below-par children should be discovered in the routine examination of entering pupils, and the referred examinations of pupils of any grade. A history should be taken in all cases and the parent should be present whenever possible.
   2. *Private physician recommendation.* Children for whom private physicians request special adjustments of the school program for health reasons.
   3. *Teacher-nurse recommendation.* The school nurse should visit the teachers in the school periodically and select children for the physician to examine. The school physician should examine these children and decide whether the children should be placed under a lightened school program.
   4. *From returning absentees and other temporarily below-par*

children. The nurse should select from among the returning absentees those children who in her judgment appear to be in need of temporary school program adjustment. These should be referred to the school physician promptly.

c. That children assigned for rest periods, or for whom other special adjustments have been made, be examined at frequent intervals by the school physicians, and at least once a month by him to determine when they may resume normal activities.

Recommendation 8. That a flexible (often lightened) school program be evolved under decentralized control and individualized to meet the needs resulting from the basic cause of the conditions found.

a. All the administrative responsibility for the handling of the physically below-par child should center in the individual school principal's office to eliminate delays which reference to any central administrative agency entails.

b. The transitory nature of the need for special care for many children should receive careful consideration. Cumbersome red tape should not prevent a child from obtaining special school adjustment when it is needed, nor should such adjustment be continued when it is no longer necessary.

Recommendation 9. That the School Health Service of the Department of Health continue to strengthen its program for the selection and referral for care of below-par children.

Recommendation 10. That medical follow-up be the responsibility of the School Health Service of the Department of Health.

a. That appointments be made to interview all parents who are not present at the school medical examinations of their children. The information given the parent, either at the school or at a home interview, should make clear the reason for referring the child for medical attention. Information on the health needs of the child should be interpreted to the parent whenever possible through personal interviews, since the sending of notes to the home conveying such needs is often futile and frequently leads to misunderstanding.

b. That the nurse, with the advice of the physician, develop a follow-up plan based on the needs of the individual child, which will attempt a solution for each factor in the case.

c. That, where economic conditions require it, contacts be established between the family and the proper medical and social agencies, public or private.

Recommendation 11. That the educational development of children under the lightened school program be planned on the basis of information obtained by the principals and teachers from the school physicians regarding the individual problems of the children.

a. That the local administrative school officials provide an opportunity for the intelligent participation of the school staff in carrying out a program to meet the children's individual needs. The development of such an educational program in each school must depend to a considerable degree upon this local leadership.

b. That the following major elements be considered in the development of this program:

1. *Coordination of medical and education services.* The education officials and teachers responsible for the care of these children should be given a clear understanding of their medical needs. They should have definite instructions from the responsible medical authorities as to the particular care which these children should have in order that their physical well-being may be effectively promoted.

2. *Emphasis on the educational adjustment of the individual pupil.* Any modified school program for below-par children should be based upon a careful study of immediate health needs. Each below-par pupil should be a subject of special study from an educational, as well as a medical point of view.

The educational program of each below-par child should be planned individually on the basis of known facts concerning his specific condition and needs. It should not,

however, unduly emphasize an individual's physical limitations.

Recommendation 12. That children with easily remediable defects without obvious impairment of general health, such as children with diseased tonsils and adenoids, or carious teeth, be not included in the group selected for special adjustment of the school program.

Recommendation 13. That where rest rooms are not obtainable in the more crowded schools, other suitable modifications of the school program be made.

This may be accomplished by relieving the child of certain parts of the daily program, such as physical education, manual activities, or relief from home work. Substitutes may be provided for various activities in the regular program that are better adapted to the physical condition of the below-par child.

Recommendation 14. That adequate pupil health records be kept for each child.

That the school medical records contain:

a. The findings of the medical examination and social history.
b. The recommendations of the examining physician.
c. The measures instituted for the fulfillment of the recommendations.

Recommendation 15. The Committee recognizes the danger that present techniques and procedures in the determination of the needs and treatment of the below-par child may become crystallized into rigid patterns based upon present concepts of the problem which later may become outmoded. It therefore recommends that the Department of Education cooperate with the School Health Service of the Department of Health to utilize the opportunity afforded by the flexibility of the recommended program for caring for below-par children, to make such modifications for improvement in the standards for determination of their needs, the operation of the program and administrative procedures, as changing conditions and concepts warrant.

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